Name:_____ Date:_____

Unit 1 **Lesson 6**

Do Now: Simplify

a) $4^{\square} \bullet 4^3 = 4^{13}$

(Find the value of $\square$)

b) $(-4xy^3)^2$

c) $x^4 \div x^4$

d) $\dfrac{1}{4^2}$

AIM: Laws of Negative Exponents

1) $x^2 \div x^6$

2) 4^{-2}

3) 5^{-2}

4) 2^{-3}

*To change a decimal to a fraction on the calculator, press _____ and then enter twice!

5) y^{-3}

6) $3(3^{-2})$

7) $\left(\dfrac{1}{2}\right)^{-3}$

*To type in a fraction on the calculator, press _____, _____, _____!

Rule: NEGATIVE EXPONENTS: _____ & make the exponent _____ !

What is any non-zero number raised to the zero exponent?

8) $5x^{-3}y^{8}z^{-1}$

9) $-(18xy)^{0}w^{-8}z^{3}$

10) $\dfrac{a^{2}b^{3}c^{4}}{a^{5}b^{2}c^{4}}$

11) $3a^{2}b^{-5}c^{-7} \bullet -2a^{4}b^{3}c^{-3}$

RULE:

- **NEGATIVE EXPONENTS: go in the _____ and become _____!**
- **POSITIVE EXPONENTS: go in the _____ .**
- **COEFFICIENTS: go in the _____, unless it's a fraction.**

12) $5c^{-3}d^{-6}e^{2} \bullet -2c^{4}d^{2}e^{-2}$

13) $\dfrac{-30x^{2}y^{-5}z^{4}}{-15x^{5}y^{4}z^{2}}$